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EXAMINER

HENNING, MATTHEW T

ART UNIT

PAPER NUMBER

2131

DATE MAILED: 06/27/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/076,404

Applicant(s)

SATO, RYUJI

Examiner

Matthew T. Henning

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 February 2002.
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1-11 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
10) ☒ The drawing(s) filed on 19 February 2002 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 2/19/2002.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

RS

1 This action is in response to the communication filed on 2/19/2002.

2 **DETAILED ACTION**

3 Claims 1-11 have been examined.

4 ***Title***

5 The title of the invention is not descriptive. A new title is required that is clearly
6 indicative of the invention to which the claims are directed. A new title is required because the
7 current title does not describe the invention but instead describes the purported advantages of
8 utilizing the invention. See MPEP Section 606.

9 ***Priority***

10 This application claims priority to Japan Application 2001-043748, filed on 02/20/2001.
11 Therefore, the effective filing date for the subject matter defined in the pending claims in this
12 application is 02/20/2001.

13 ***Information Disclosure Statement***

14 The information disclosure statement(s) (IDS) submitted on 2/19/2002 are in compliance
15 with the provisions of 37 CFR 1.97. Accordingly, the examiner is considering the information
16 disclosure statements.

17 ***Drawings***

18 The drawings are objected to under 37 CFR 1.83(a). The drawings must show every
19 feature of the invention specified in the claims. Therefore, the method, of claim 3, involving
20 double encryption, decryption and re-encryption of a program code portion and the method, of
21 claims 4-5, of creating a key from a value stored in memory must be shown or the feature(s)
22 canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

The abstract of the disclosure is objected to because:

1 The abstract does not meet the length requirement as it has less than 50 words. A more
2 descriptive and lengthy abstract is required.

3 Correction is required. See MPEP § 608.01(b).

4 *Claim Rejections - 35 USC § 112*

5 The following is a quotation of the second paragraph of 35 U.S.C. 112:

6 The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject
7 matter which the applicant regards as his invention.

8
9 Claims 3 and 8-11 are rejected under 35 U.S.C. 112, second paragraph, as being
10 indefinite for failing to particularly point out and distinctly claim the subject matter which
11 applicant regards as the invention.

12 Claim 3 recites “encrypting a program code portion...with a first encryption key” and
13 “encrypting the encrypted program code portion with a second encryption key” in lines 2-4.
14 Thereafter, in lines 4-5 and 7-8, claim 3 recites “decrypting the program code portion that has
15 been encrypted with the first encryption key” and “decrypting the program code portion that has
16 been encrypted with the second encryption key”. The first cited limitations seem to indicate that
17 there was one portion of code double encrypted with two different keys and the second cited
18 limitations seem to indicated that there were two portions of code, each encrypted with a
19 different key. As such, the ordinary person skilled in the art would be unable to determine
20 whether there is one or two portions of code being encrypted and decrypted and therefore would
21 be unable to determine the scope of the claim. Therefore, claim 3 is rejected for failing to
22 particularly point out and distinctly claim the subject matter which the applicant regards as the
23 invention.

1 Claim 3 recites the limitation "the program code portion" in Lines 11, 12, 13, and 14.

2 There is multiple antecedent basis for this limitation in the claim as these limitations could be
3 referring to "the program code portion that has been encrypted with the first encryption key" or
4 "the program code portion that has been encrypted with the second encryption key".

5 Claims 8-9 recite the limitation "the program code portion of the application" in line 7.
6 There is insufficient antecedent basis for this limitation in the claim.

7 Claims 8-9 recite the limitation "the program code portion" in line 8, which could be
8 referring to "the program code portion of the application" or "the program code portion of said
9 device".

10 Claims 10-11 recite the limitation "the encrypted data of the application" in lines 2-3.
11 There is insufficient antecedent basis for this limitation in the claim.

12 Claims 10-11 recite the limitations "the encrypted data" and "the decrypted data" which
13 could be referring to the data of the application or the data of the device driver.

14 ***Claim Rejections - 35 USC § 102***

15 The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis
16 for the rejections under this section made in this Office action:

17 *A person shall be entitled to a patent unless –*

18 *(b) the invention was patented or described in a printed publication in this or a foreign country*
19 *or in public use or on sale in this country, more than one year prior to the date of application for*
20 *patent in the United States.*

21
22 Claims 1-2, and 4-5 are rejected under 35 U.S.C. 102(b) as being anticipated by Glover
23 (US Patent Number 6,052,780).

1 Regarding claim 1, Glover disclosed a method for operating a device driver (See Glover
2 Abstract and Col. 9 Lines 7-9), comprising the steps of: encrypting a program code portion of a
3 main process of a device driver (See Glover Col. 20 Lines 47-48); decrypting the encrypted
4 program code portion in an initialization process of said device driver (See Glover Col. 9 Lines
5 27-31); and re-encrypting the decrypted program code portion after the decrypted program code
6 portion is executed (See Glover Col. 22 Lines 32-36) and before said device driver is released
7 (See Glover Col. 10 Lines 45-47).

8 Claim 2 is rejected for the same reasons as claim 1 above and further because Glover
9 disclosed initializing the device driver before decrypting the portions of code (See Glover Col.
10 10 Lines 19-27).

11 Regarding claims 4-5, Glover disclosed that at least one memory area is disposed on an
12 application and a key for encrypting and decrypting the program code portion in said encrypting,
13 decrypting and re-encrypting steps is created corresponding to a numeric value stored in one of
14 the memory areas (See Glover Col. 21 Lines 36-38).

15 ***Claim Rejections - 35 USC § 103***

16 The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness
17 rejections set forth in this Office action:

18 *A patent may not be obtained though the invention is not identically disclosed or described as set*
19 *forth in section 102 of this title, if the differences between the subject matter sought to be*
20 *patented and the prior art are such that the subject matter as a whole would have been obvious*
21 *at the time the invention was made to a person having ordinary skill in the art to which said*
22 *subject matter pertains. Patentability shall not be negatived by the manner in which the*
23 *invention was made.*
24

1 Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Glover, and further
2 in view of Schneier ("Applied Cryptography, Second Edition").

3 Glover disclosed encrypting a program code portion, decrypting the program code
4 portion, and re-encrypting the program code portion after processing was complete (See the
5 rejection of claim 1 above and Col. 9 Lines 22-24 and Lines 33-35), but failed to disclose
6 encrypting and decrypting with two different keys.

7 Schneier teaches that double encryption using two different keys provides two times the
8 security of single encryption (See Schneier Section 15.1).

9 It would have been obvious to the ordinary person skilled in the art at the time of
10 invention to employ the teachings of Schneier in the encryption, decryption, re-encryption
11 system of Glover, by encrypting the portion of code with one key and encrypting the result with
12 a second key and decrypting in a reverse manner. This would have been obvious because the
13 ordinary person skilled in the art at the time of invention would have been motivated to increase
14 the security of the encrypted program.

15 Claims 6-11 rejected under 35 U.S.C. 103(a) as being unpatentable over Glover as
16 applied to claims 1-2 above, and further in view of McManis (US Patent Number 5,757,914).

17 Regarding claims 6-7, Glover disclosed the device driver communicating with an
18 application (See Glover Col. 10 Lines 34-47), but failed to disclose authentication between the
19 two.

20 McManis teaches a method for protecting two communicating applications in which
21 before process A calls process B, A authenticates B by verifying the integrity of B, and before B

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1 responds to A, B verifies the integrity of A, and in both cases if the verification fails execution is
2 aborted (See McManis Col. 3 Line 53- Col. 6 Line 9).

3 It would have been obvious to the ordinary person skilled in the art at the time of
4 invention to employ the teachings of McManis in the dynamically loaded device driver by
5 mutually authenticating the calling application and the device driver by integrity verification
6 when a request is made by the application to the device driver. This would have been obvious
7 because the ordinary person skilled in the art would have been motivated to protect the use of the
8 application as well as the use of the dynamically loaded device driver.

9 Regarding claims 8-9, the combination of Glover and McManis disclosed that before
10 supplying output data to said device driver, an application detects whether or not the program
11 code portion of said device driver has been forged and when the program code portion has been
12 forged, the application stops outputting the output data to hardware, and wherein before
13 supplying input data to the application, said device driver detects whether or not the program
14 code portion of the application has been forged and when the program code portion has been
15 forged, said device driver stops outputting the input data to the application (See McManis. Fig 2
16 and related text).

17 Regarding claims 10-11, the combination of Glover and McManis disclosed that said
18 device driver does not decrypt the encrypted data of the application, and wherein only when the
19 program code portion has not been forged, the application decrypts the encrypted data and
20 outputs the decrypted data to said device driver (See McManis Col. 5 Lines 50-67).

21 *Conclusion*

22 Claims 1-11 have been rejected.

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1 The prior art made of record and not relied upon is considered pertinent to applicant's
2 disclosure.


3 a. Berg et al. (US Application Publication 2001/0044904) disclosed a system in
4 which communication between an application and a device driver were authenticated and
5 encrypted.


6 b. Challenger (US Application Publication 2002/0091941) disclosed a system in
7 which a device driver is encrypted and only decrypted on granting of authorized use.

8 Any inquiry concerning this communication or earlier communications from the
9 examiner should be directed to Matthew T. Henning whose telephone number is (571) 272-3790.
10 The examiner can normally be reached on M-F 8-4.

11 If attempts to reach the examiner by telephone are unsuccessful, the examiner's
12 supervisor, Ayaz Sheikh can be reached on (571) 272-3795. The fax phone number for the
13 organization where this application or proceeding is assigned is 703-872-9306.

14 Information regarding the status of an application may be obtained from the Patent
15 Application Information Retrieval (PAIR) system. Status information for published applications
16 may be obtained from either Private PAIR or Public PAIR. Status information for unpublished
17 applications is available through Private PAIR only. For more information about the PAIR
18 system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR
19 system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

20
21 
22 Matthew Henning
23 Assistant Examiner
24 Art Unit 2131
6/23/2005


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